

Attorney Docket No. HHI-032US
US Serial No. 09/889,916
Group Art Unit 1725

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REMARKS

Upon entry of this Amendment, claims 1-10 remain pending. Reconsideration and allowance of all pending claims are requested in view of the remarks below.

Applicant thanks the Examiner for the telephone interview conducted June 26, 2003.

Drawing Objection

The drawing is objected to in that it does not find support for the claimed feature "means for adding fibers, particles or similar additive before the molten light metal enters the gap." Applicant submits a corrected drawing herewith. Applicant further submits that no new matter is involved, as support is provided in the specification at least at page 6, lines 15-26, and claim 1.

Claim Rejections - Under 35 U.S.C. §112

Claims 6-9 are rejected under 35 U.S.C. §112, first paragraph, as allegedly containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the art that the inventor, at the time the application was filed, had possession of the claimed invention. Applicant traverses this rejection.

Applicant submits that the specification, at least at page 6, lines 15-26 and claim 1, as filed, provides support for means for adding fibers, particles or similar additive before the molten light metal enters the gap. Specifically, page 6 of the specification

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teaches that an additional feed unit, e.g., for granular or powder type particles or fibers may be provided. The specification further notes that "the method of feed for the particles or fibers may be to add these to the molten metal or to add them to the molten metal up to a point immediately before gap 4..."

In view of the above remarks, Applicant submits that the rejection of claims 6-9 under 35 U.S.C. §112, first paragraph, should be withdrawn.

Claim Rejections – Under 35 U.S.C. §103(a)

Claims 1-10 are rejected under 35 U.S.C. §103(a) as being unpatentable over either German Patent No. 1,508,800 of Blum et al. or International Publication No. WO 91/12910 of Hugen in view of U.S. Patent No. 4,961,461 of Klier et al. Applicant traverses this rejection.

As a preliminary matter, Applicant objects to the combination of these references. Applicant asserts that it would not be obvious to modify the '800 patent in view of the '461 patent.

To properly combine references, an objective teaching leading to the combination must be shown. *In re Dembiczak*, 175 F.3d 994 (Fed. Cir. 1999). "The showing must be clear and particular.... Broad conclusory statements regarding the teaching of multiple references, standing alone, are not 'evidence.'" *Id.*

Also, the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the

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combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). See also MPEP § 2143.01.

Specifically, the '800 patent involves a device for continuous casting of refractory materials. Because the text of the '800 patent is in German, Applicant references an apparent family member, U.S. Patent No. 3,442,321 to Blum, in the following discussion. Applicant notes that Blum uses an electron gun 1 to melt very high melting temperature material, such as uranium carbide introduced to the electron beam 3. See column 1, lines 62-68. Applicant notes that Blum is directed to obtaining what it describes as "calm fusion". Blum notes that the aim of his invention is to eliminate the problem of evaporation of the material which results in more or less rapid accumulation of a troublesome layer on the walls of a cold crucible by the use of a continuous renewal of the wall of the crucible. See column 1, lines 50-61.

Blum notes that the structural soundness of the material is improved if the ingot is caused to rotate together with its crucible beneath a stationary electron beam. See column 1, lines 36-47. As summarized in column 2, lines 9-16, the configuration of Blum locates the electron beam such that a melting pot is formed having a sidewall which is renewed progressively as the movement of the pulleys 6, 8 takes place. The wall leaves the melting point before any troublesome deposit has had time to form and it is progressively replaced by a fresh wall.

While Blum is directed to various structures that accommodate the difficulties encountered with very high melting temperature materials by the use of an electron gun, Klier is directed to a substantially different process. Klier is focused on producing "composites as free as possible from porosity". See column 2, lines 31-32. To

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accomplish this, Klier teaches the use of "highly shearing the matrix material in the concentrated dispersion". See, for example, claim 1. Klier does not involve an electron beam or continuously moving walls in a melting pot. Instead, Klier uses a rotor 103 to pump and blend a partly liquid mixture into a region 104 where it is vigorously agitated and mixed by high shear provided by the narrow gap between wall 105 and the conical rotor 106, producing a well dispersed slurry 107. See column 5, line 50-62.

The Office Action asserts that it would be obvious to combine the teachings of Blum and Klier by simply adding a reinforcement material into the molten metal of Blum if a composite article is designated. As a preliminary matter, Applicant submits that one of ordinary skill in the art would not look to Blum in order to produce light metal pellets having fibrous particles or similar additives, at least because Blum makes no mention of a composite particle. Furthermore, as noted at column 1, lines 62-66, the electron beam is provided to melt the material introduced into the electron beam, which does not suggest the use of fibers, particles, or similar additives not formed of the metal being processed.

However, even if one were to look to Blum for the production of light metal pellets having fibrous particles or similar additives, Applicant submits that it would not be obvious to combine Blum with Klier. As noted above, Klier is directed to a substantially different application, specifically a process that is focused on the production of a slurry to produce a composite as free as possible from porosity. There is no suggestion in Klier to use an electron gun or to use a melting pot having a progressively renewed side wall at the melting point. Applicant submits that the Office Action is insufficient to support a combination of these references, and is improperly using

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hindsight, with the benefits of Applicant's disclosure, to assert that Applicant's invention is obvious.

Even if the references were combined, Applicant submits that their combination is insufficient to make obvious each of the elements of independent claims 1 and 6. For example, the references, even in combination, do not teach feeding molten light metal into a gap between two cooling bodies and adding fibers, particles or similar additives before the molten light metal enters the gap. As noted above, the references do not provide a motivation for modifying Blum to provide all the limitations of claims 1 and 6. However, "The mere fact that a worker in the art could rearrange the parts of the reference device to meet the terms of the claims is not by itself sufficient to support a finding of obviousness. The prior art must provide a motivation or reason for the worker in the art, without the benefit of appellant's specification, to make the necessary changes in the reference device." *Ex parte Chicago Rawhide Manufacturing Co.*, 223 USPQ 351, 353 (Bd. Pat. App. & Inter. 1984).

The Office Action also asserts that the international publication WO91/12910 to Hugens, would be obvious to modify in view of Klier. Applicant asserts that it would not be obvious to look to Hugens in order to produce light metal pellets having fibers, particles or similar additives, as Hugens makes no mention of such additives. Applicant submits that it would not be obvious to combine Hugens with Klier. As noted above, Klier is directed to the production of a slurry in order to produce composites as free as possible from porosity, whereas Hugens is directed to continuous casting of discrete solid shapes by the use of a modified continuous casting machine. In summary, Applicant submits that no objective teaching in the cited art would lead one of ordinary skill in the

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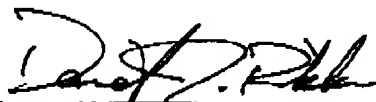
art to use Hugens, or combine Hugens with Klier, for the production of light metal pellets having fibers, particles or similar additives.

In view of the above remarks, Applicant submits that claims 1 and 6 are patentable over a combination of Blum and Klier and a combination of Hugens and Klier. The remaining claims 2-5 and 7-10 are patentable at least by way of their dependency from claim 1 or 6.

Conclusion

In view of the remarks set forth above, it is respectfully submitted that this application is in condition for allowance. Accordingly, allowance is requested. If there are any remaining issues or the Examiner believes that a telephone conversation with the Applicants' attorney would be helpful in expediting prosecution of this application, the Examiner is invited to call the undersigned at (617) 227-7400.

Respectfully submitted,
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Version With Markings to Show Changes Made

In the Specification

Please amend the third full paragraph on page 6, lines 15-26 as follows.

In the devices of both Fig. 1 and Fig. 2, an additional feed unit 10, e.g., for granular or powder-type particles or fibers may be provided. Examples of possible granular or powder-type particles are those of SiC, Al₂O₃, or carbon. The method of feed for the particles or fibers may be to add these to the molten metal or to add them to the molten metal up to a point immediately before gap 4 such that a specified distribution of particles or both fibers and molten magnesium is assured – and thus the consistency of the product as well. Fibers may as required be added in loose form as bulk material, or as nonwoven, woven or knit material, or in analogous form such that this method of adding the fibers ensures especially uniform product characteristics for the fiber-containing pellets. An especially advantageous method may be to homogenously distribute the particles or fibers at an external site, e.g., by mechanical or induction stirring.

In the Drawings:

Corrections to Figures 1 and 2 are shown in red and filed with this Response.

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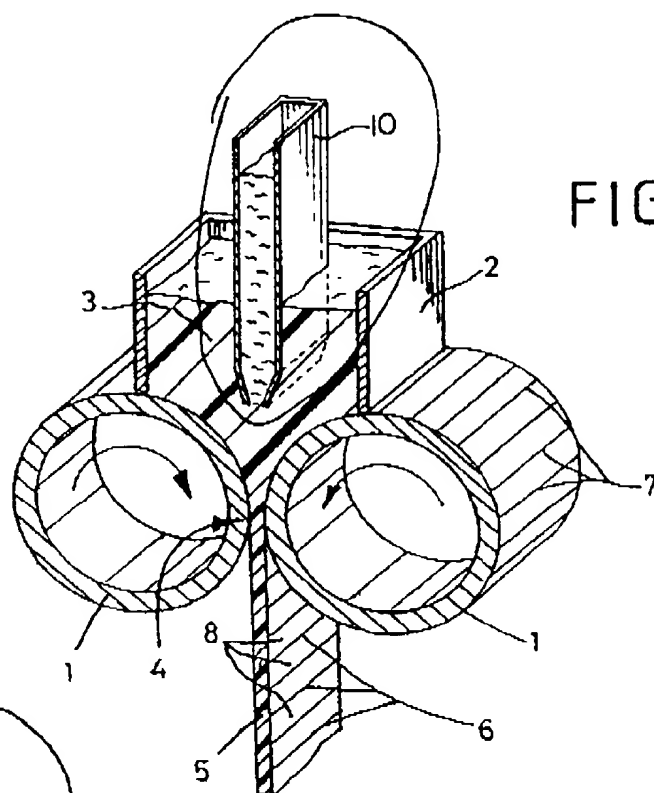


FIG. 1

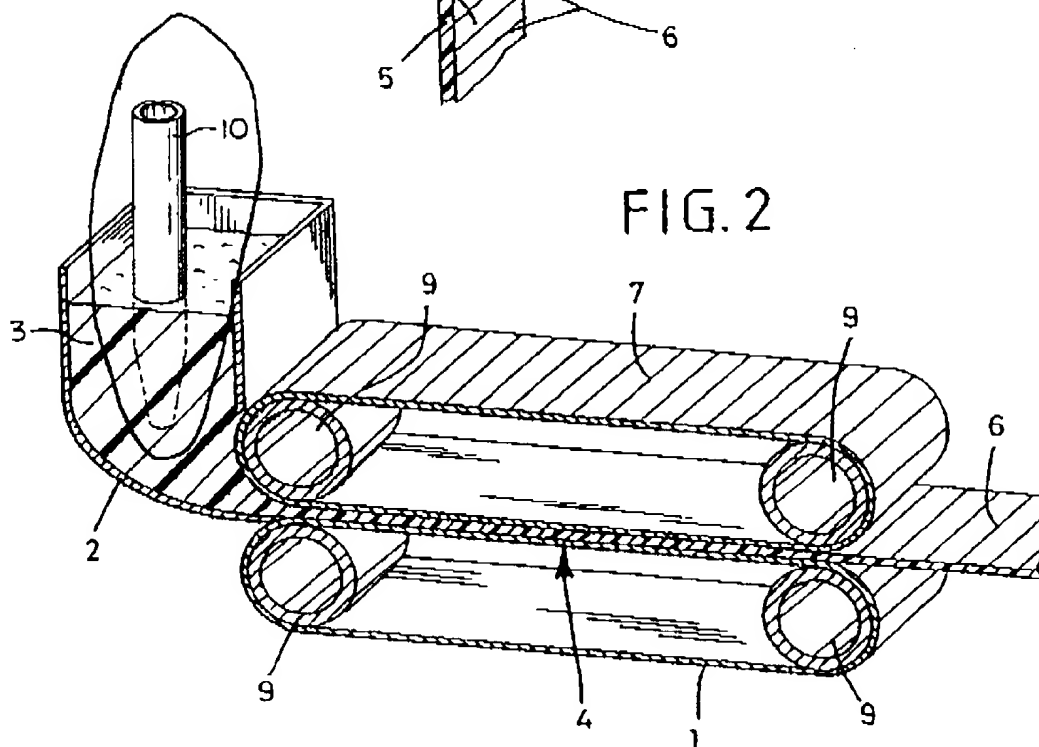


FIG. 2